

Patent Claims

1. A component having a semiconductor body, in which four doped regions (1, 3, 4, 5) whose conductivities have alternating signs are formed one above the other between two main sides, of which regions one region, as first base region (1), has a low basic doping of the semiconductor body, and a further region, whose conductivity has an opposite sign to that of the former region, is formed as second base region (4) in a manner extending as far as one of the main sides and is provided with a gate electrode (G), which is present on said main side, in such a way that a channel formed in the second base region can be controlled, and the two remaining regions (3, 5) are provided with a source contact (S), which also makes contact with the second base region and is applied on the same main side as the gate electrode, or respectively with a drain contact (D), in which case a further region, which is doped such that its conductivity has the same sign as the first base region, is present as buffer layer (2) between the first base region (1) and the region provided with the drain contact (D), and the first base region (1) is dimensioned in such a way, and the magnitude of the doping of the buffer layer (2) is chosen in such a way, that, in an operating state in which the component effects blocking in the direction from the source

contact toward the drain contact, at least in an envisaged range of applied electrical voltages, a space charge zone present in the first base region is formed in a manner extending at least as far as the buffer layer (2),

5 wherein

a further buffer layer (6), which is doped such that its conductivity has the same sign as the first base region, is present between the first base region (1) and the second base region (4), and

10 the magnitude of the doping of the further buffer layer (6) is chosen in such a way that the component effects blocking in the direction from the drain contact toward the source contact in an envisaged range of opposite applied electrical voltages.

15 2. The component as claimed in claim 1,
in which the magnitude of the doping of the further buffer layer (6) is chosen in such a way that, in an operating state in which the component effects blocking in the direction from the drain contact toward the source contact, at least in an
20 envisaged range of applied electrical voltages, a space charge zone present in the first base region (1) is formed in a manner extending at least as far as the further buffer layer (6).